propellant has an a_{onset} value, where a_{onset} is the entrainment nset parameter and is given by:

$$a_{onset} = 1.05 \times 10^{-2}[\rho_g^{1.3}/\rho_l^{0.3}][1/(0.03\,C_{Bl})^{0.8}](1/\mu_g)\,\sigma\mu_l^{0.6};$$

where ρ_g is the average density of the gas stream in the port, ρ_l is the average density of the propellant in the liquid layer, C_{Bl} is the blowing correction coefficient and is given by:

$$C_{Bl} = (2/2 + 1.25B^{0.75})$$

where $0 < B < 15$, and μ_g is the mean gas viscosity of the gas stream in the port, and the units of a_{onset} is $kg^{1.6}/(m^{2.6}\text{-}sec^{1.6})$;

flowing the gas stream through the port; and

combusting said propellant and gas wherein said propellant has a value of a_{onset} that promotes entrainment of droplets from said liquid layer into said gas stream flowing in said port.

15. (Amended) The method of Claim 14 wherein a_{onset} is equal to or less than approximately 0.9 $kg^{1.6}/(m^{2.6}\text{-}sec^{1.6})$.

16. (Amended) The method of Claim 14 wherein the propellant is selected from a n-alkane class of hydrocarbons, having the general formula of $C_n H_{2n+2}$ and mixtures thereof, where n is a mean carbon number and is in the range of 15 to 80, and which are solid at room temperature.

17. (Amended) The method of Claim 14 wherein the propellant is selected from a group of alkhylnaphthalene compounds, anthracene, and mixtures thereof.

18. (Amended) The method of Claim 14 wherein the propellant is selected from a group of organic acids having the general formula of $CH_3(CH_2)_n COOH$ and mixtures thereof, where n is in the range of 8 to 25.

19. (Amended) The method of Claim 14 wherein the propellant is selected

from a group of n-paraffin compounds and mixtures thereof.

Cancel claim 20.

21. (Amended) The method of Claim 14 wherein the propellant is selected from a group of isomers of the alkane class of hydrocarbons.

Cancel claim 48.

Please add the following new claim:

49. (New) A method of combusting a propellant that exhibits desirable regression rate during combustion within a port having an oxidant flowing through the port, comprising the steps of:

flowing the oxidant through the port;

the propellant forming, under the heat transfer from the oxidant flowing through the port, a liquid layer having a liquid viscosity of less than about 1 milliPa-sec, and a surface tension of less than about 25 milliN/m, such that droplets from said liquid layer are entrained in said oxidant; and

combusting said propellant and oxidant.